

Editors Column

We are pleased to bring you the last edition for this year of our company newsletter. In addition to our regular features such as the legislation corner, this edition contains articles on National tree planting day, carbon emissions, details on a Reduced Emissions from Deforestation and forest Degradation (REDD+) project that Black Crystal is currently undertaking, together with the POTRAZ green building project in Harare which we have completed and also the environment poems competition that Black Crystal sponsored.

We welcome your comments and environmental contributions which you may kindly send to The Editors on:

infor@blackcrystal.co.zw

The Black Crystal staff would like to wish you and your family a merry Christmas and a happy and peaceful New Year!



Environmental Consultants
Caring for the environment beyond today

Black Crystal Consulting is one of Zimbabwe's leading reputable companies offering a quality service in environmental and socioeconomic consultancy services. Black Crystal Consulting believes in ***caring for the environment beyond today*** to ensure that biodiversity is maintained and that natural resources are not depleted for the next generation.

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Did you know?

In Southern California alone, 5,000 annual premature deaths are attributed to pollution from short-haul diesel trucks!

Protect the environment: Say No To Environmental Crime!

Zimbabwe is our country and our responsibility and it is our duty as citizens to protect the precious environment. The Environmental Management Agency (EMA) is calling on every citizen to assist by reporting those people committing environmental crime such as tree cutting, lighting fires, dumping waste, polluting river resources and so on. You can call EMA on 705661-3 or email: ema@ema.co.zw or Toll free: 0800 4297 to report these illegal activities.

Please call City of Harare, Waste Department on 770362/752637 or email Mr Chibanda on emusavazi@hararecity.co.zw to report illegal dumping.



Illegal dumping

It has also been reported that truckloads of water are being drained day and night from residential boreholes thus decreasing water capacity in areas; report this to Mr P M P Fukwa - City Works - phone 772453/791101 or 700087 or email mpfukwa@hararecity.co.zw.

It is time for us to join together to bring back our beautiful country!

Carbon Emissions Threat to Air

Carbon emitted by veld fires has become significant in air pollution and has resulted in a 'river of smoke' in the atmosphere stretching roughly from Bulawayo to Maputo in the dry season. This seems to peak at around 22nd of September. The reason for this is the gyre centred on Botswana – Botswana Upper High – and the clear skies. The pollution is trapped by this gyre and about 80% of the air just goes round and round, high UV causes chemical transformations and you get inversions which all go to make up a 'soup' of pollution. Some of this bleeds off is why you get that band of very high pollution levels.

The growth in CO₂ emissions has exceeded even the most fossil-fuel intensive IPCC scenario developed in the late 1990s. The present atmospheric carbon dioxide (CO₂) concentration is the highest during the last 800,000 years and probably during the last 15 million years. The atmospheric CO₂ concentration is now approaching 400 ppm.

This unacceptable situation is made worse by only 400kgs out of every tonne CO₂ is taken up by vegetation whereas 50 years ago 450kgs out of every tonne CO₂ was taken up by vegetation. Veld fires have a double impact as they also kill trees which act as carbon sinks.

Action is needed to swiftly and decisively address the emerging climate crisis in a positive and constructive way



The "River of Smoke": by Tony Lampard

Black Crystal and REDD+

Forests, including our savanna woodlands, play an important role in carbon sequestration as they are significant sinks for carbon dioxide. But these vital green areas are under serious threat from agricultural expansion, reliance on wood as fuel, poverty and population growth. So there is a need to maintain as much tree cover as possible and still take into account the needs of rural people. Reduced Emissions from Deforestation and forest Degradation (REDD+) is an activity that is now eligible for carbon trading and financing. REDD+ creates economic value for the carbon trapped in standing, living trees. A key part of REDD+ is woodland conservation and sustainable management. The mechanism will provide an economic incentive for rural communities and governments to practice good management of the natural resources (including wildlife) which should reduce some of the economic drivers of deforestation.

Black Crystal are providing technical expertise in an ambitious REDD+ project that is being undertaken by Carbon Green Investments.

Deforestation was rated severe in Hurungwe. Deforestation is rampant due to the current farming practices. Most of the farmers have ventured into tobacco farming and they use firewood for curing. The pictures below show a tobacco field and the barns that currently use firewood. The heap of ash shows the quantities of wood being used. The farmers indicated that to cure a hectare of tobacco they used 40 scotch carts (1 scotch cart = 1 or 1,5m³) of wood



E-Africa Kariba REDD Baseline Survey Report, May 2011

National Tree Planting Day

The first Saturday of every December has been set aside as the National Tree Planting Day by President Robert Mugabe. It was first celebrated in the 1980's after the President realised that the country was losing thousands of hectares of forest every year to veld fires and indiscriminate tree cutting. The Manicaland province will host this year's commemorations under the theme "Forests for people". The sausage tree/umuvee/mumve is the tree of the year. The tree is botanically known as *Kigelia Africana* and it grows up to 20 m tall in a riverine habitat. Its fruit, bark, leaves and roots are used for medicinal purposes. One can buy tree samplings at a cost of USD2 from the Forestry Commission at Number 1 Orange Grove, Highlands, Harare.



The sausage tree

Did you know?

Our country is losing 320 000 ha of forest every year due to veld fires, indiscriminate firewood cutting and tobacco curing.

The Postal and Telecommunications Regulatory Authority of Zimbabwe: A Leader in Green Buildings



POTRAZ is one of the few companies that are leading the way with their proposed purpose built headquarter facility in Harare due for completion in June 2012: a Green building that employs environmentally responsible systems.



Aerial view of west facing entrance

The project is significant in terms of its design and use of technology due to the rising global concern for climate change, increasing cost of fuel, demand for air conditioning systems and erratic electricity supplies.

These factors led the team of architects, engineers and environmental consultants to develop environmentally sustainable based solutions.

The Project Architects, The Stone Beattie Studio, designed the facility with open atriums puncturing the north and south wing office volumes in order to a) minimize the width of the building as narrow buildings are cooler b) maximize air flow over the surfaces in order to cool the building and c) maximize natural lighting. The atrium will be planted with indigenous vegetation and overhanging balconies built on the first floor will provide shading from solar heat on the ground floor. There will be green open spaces and fully landscaped grounds with indigenous vegetation which will also provide a cooling effect. The facility was designed to face north in order to maximize capture of solar

radiation for the solar panels that will be mounted on top of the roof of the office space



View of central atrium

Project Engineers, Reclon, proposed a solar electricity system to supply electricity to the building through a battery storage system. During the day solar panels will convert electricity to be stored in the battery and used for general and security lighting and small 220V power.

At night and on non-sunny days ZESA electricity supply shall act as a back up and charge the batteries. The solar electricity system will reduce the usage of electricity generated by ZESA. In the event of the non-availability of ZESA a stand-by Generator shall supply both non-essential electrical services and essential electricity services where required.

As air conditioning systems are electricity intensive the solar system will also be utilized to run an alternative air conditioning system using new technology not yet seen in Zimbabwe called an Ice-Cell system that consists of a chiller used to build ice in a thermal storage tank during the night. When fully frozen the ice cell stores energy that is used in providing cooling to the building the day. This allows the chiller to run during the night and become idle during the day when the solar electric power usage is at peak. Usage of solar power assisted chillers will be used to build more ice during the day and

thereby reducing the chiller demand during the night.

Overall, the proposed Green design aspects result in many positive benefits:

- Reduction in daily operating costs,
- Reduction on reliance on electricity generated by ZESA and
- Contribution to the reduction of polluting climate changing emissions.

This is a very positive environmental impact and results in a reduction of the carbon footprint of the facility.

The EIA, undertaken by Black Crystal, has been approved by the Environmental Management Agency.

DID YOU KNOW?

That the production of a single gold ring results in 20 tons of waste materials!

In addition to this mining for the precious metal around the world causes significant loss of land, contaminates groundwater supplies and leaves behind toxic waste, particularly cyanide, which often ends up in the oceans.

Legislation Corner: Know your Environmental Rights...

Section 4 of the Environmental Management Act (EMA), (Chapter 20:27), 2002, affords every citizen of Zimbabwe the following environmental rights:

- The right to live in a clean environment that is not harmful to their health;
- Access to environmental information;
- The right to protect the environment for the benefit of present and future generations; and
- The right to participate in the implementation of legislation and policies that prevent pollution, environmental degradation and sustainable

management and use of natural resources, while promoting justifiable economic and social development

Environmental Poems Competition

Toward the end of the second term, school children in grades four to seven at Chisipite Junior and Chikurubi Primary schools took part in a Black Crystal sponsored poetry competition in commemoration of World Youth Day. The children were given a number of environmental themes to write about including water, wildlife, veld fires, recycling and youth and the environment. A total of 96 poems were submitted from which two winning poems were chosen from each school. These poems were included in the August edition of *The Crystal*.

Prizes were presented to the schools at the end of September. The winning contestants received a Pizza Inn voucher and a notebook made from recycled paper. The runners up received bookmarks made from recycled paper with interesting environmental facts and quotes. As a token of thanks to the schools for participating, each was given three tree saplings – two indigenous (Fever Tree, *Acacia xanthophloea*), and one fruit tree. Overall, the environmental poems competition was well received and was testament to the fact that most school children are aware of the need to protect the natural environment, especially where the well-being of future generations is concerned.

As we come to the end of the year, Black Crystal would like to send heartfelt thanks to all our clients and the followers of The Crystal we thank you all for the support you have given us throughout the year.



Chikurubi Primary School Prize Presentation



Chisipite Junior School Prize Presentation

Coming soon on the Black Crystal website:

Photographic coverage of the successful 'Second Skins' fashion show held recently at Hellenic International Academy. The models, both girls and boys put on a wonderful show: the outfits were designed by the students and created from recycled



materials. The funds raised will be used to purchase dustbins that will be positioned along the Borrowdale Road. The pupils have been in contact with Miracle Missions, who produce the dustbins and who work tirelessly with our community in trying to clean up our city. A very worthwhile cause!